REMARKS

The Applicants appreciate the Examiner's thorough examination of the subject application and request reconsideration of the subject application based on the following remarks.

Claims 1, 8, and 11 have been amended. Claims 2-7, 9-10, and 13-40 have been cancelled without prejudice or disclaimer in this or a previous amendment. Claims 1, 8, and 11-12 are now pending in the instant application.

Support for the amendments to the claims may be found throughout the specification. For example, support for the amendment to claim 1 can be found in claims 2, 6, and 7 as originally filed. No new matter has been added by the amendments to the claims.

Claims 1-4, 6-8, and 11-12 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for allegedly failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 8, and 11, as amended, are fully compliant with the requirements of 35 U.S.C. §112 including the requirements of §112, second paragraph. Thus, the rejection should be withdrawn.

A brief description of the invention may be of assistance in understanding the differences between the claimed invention and the cited references.

The present invention provides a method of forming a selective base pair. The method of selective base pair preparation provided by claim 1 comprises the step of contacting a 6-substituted-2-aminopurine nucleic acid with a 2-hydroxypyridine or 2-oxopyridine nucleic acid to form a base pair. The substituent at the 6 position of the 2-aminopurine nucleic acid is

selected from a di(lower alkyl)amino group or a five or six membered aromatic heterocyclic group having 1 or 2 heteroatoms selected from N, O, or S which groups provide sufficient steric bulk to block base-pairing with thymidine, uridine or cytosine.

As depicted in FIG. 2, 6-substituted-2-aminopurine bases having a sterically bulky group at the 6-position selectively form base pairs with 2-hydroxypyridine (or 2-pyridinone) bases (see a and c) in part because the interaction of the 6-substituent of the 2-aminopurine base interacts with the keto substituent of thymidine base (see, b, d and e).

None of the cited references teach or suggest methods of preparing a selective base pair composed of a 2-hydroxypyridine or 2-oxopyridine nucleic acid and a 6-substituted-2-aminopurine nucleic acid, which is not capable of pairing with thymidine, uridine or cytosine.

Claims 1-4, 6-8, and 11-12 were rejected under 35 U.S.C. §102(b) as being allegedly anticipated by Rappaport (U.S. Patent 5,126,439).

Claim 1, as amended, provides a method for forming a selective base pair, the method comprising the step of contacting (i) a nucleic acid having, as a base, 2-aminopurine, which is substituted at position-6 by a di(lower alkyl)amino group or a five or six membered aromatic heterocyclic group having 1 or 2 heteroatoms selected from N, O, or S.

The purine bases of the instantly claimed invention are capable of specifically forming a base pair together with 2-oxo or 2-hydroxy pyridine with high selectivity and high affinity, even in the presence of natural pyridine bases (i.e., cytosine and thymine).

None of the purine bases provided by the claimed invention are disclosed or suggested by the Rappaport patent.

As the reference is understood, Rappaport teaches purine bases substituted at the 6-position

with hydrogen, sulfur, oxygen or amino (NH_2) (See, column 2, lines 25-35). Rappaport neither teaches nor suggests purine basis substituted at the 6-position with larger substituents such as a di(lower alkyl)amino group or a five or six membered aromatic heterocyclic groups.

For at least the reasons discussed herein, claims 1, 8, and 11-12 are patentable over the Rappaport document. Applicants respectfully request withdrawal of the rejection and reconsideration of the claims.

It is respectfully submitted that the subject application is in condition for allowance. Early and favorable action is requested.

Applicants believe that additional fees are not required for consideration of the within Response. However, if for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge Deposit Account No. **04-1105.**

Respectfully submitted,

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